

Remarks

Entry of the foregoing and reconsideration of the application identified in caption as amended, pursuant to and consistent with the Rules of Practice in Patent Cases, and in light of the remarks which follow, is respectfully requested.

By the present amendment, claim 1 has been amended and claim 25 has been cancelled, so that claims 1-19 and 24 will be pending upon entry of the present amendment.

Claim 1 has been amended to incorporate the subject matter of depending claim 25 and claim 25 has been cancelled accordingly.

Claim 25, now represented by claim 1, was rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. This rejection is respectfully traversed.

The present invention is directed to a flexible polymer film layer which has been polymerized and contains monomers in the film still capable of further polymerization. The film is fabricated from starting materials to an incomplete polymerization with monomers remaining or to a complete polymerization with the later introduction of monomers. Either way, the polymer film layer is in an intermediate state and due to its flexibility the material can be easily formed around the tooth surfaces. Once set in place, the film layer is cured by further polymerization of the monomers to its final hardened state to form a coating which is adhered to the tooth, and in particular to protect against caries.

The film is described in the specification in one embodiment as a polymer which does not contain any fibers. In a further embodiment, the polymer film may additionally contain fillers for strengthening the film. Two types of fillers are disclosed, fiber-shaped fillers and particle-shaped fillers, at page 10, lines 6-22 of the specification. Accordingly, the specification describes the film in three embodiments: 1) a film containing polymers; 2) a film containing polymers plus particle-shaped fillers; and 3) a film containing polymers plus fiber-shaped fillers.

With respect to the rejection under 35 U.S.C. § 112, second paragraph, for indefiniteness, the phrase “non fiber-reinforced flexible film” clearly refers to embodiments 1) and 2) above. Embodiment 3) is not included within this phrase. Thus, a person of ordinary skill in the art would understand what applicant regards as the invention with respect to such phrase. Accordingly, withdrawal of the record rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Claims 1, 2, 4-6, 8, 9, 11, 16, 17, 19, and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,197,410 to Vallittu et al. ("Vallittu"). This rejection is respectfully traversed.

Vallittu does not disclose or suggest the claimed dental polymer film according to the present invention. The disclosure of the cited reference is limited to reinforcing fibers used in combination with polymers. The product is a fiber-reinforced composite and due to its various uses fiber is a required component. While Vallittu discloses that particle fillers can be added to the material, the material in question contains fibers in combination with a multiphase polymeric matrix. There is no disclosure or suggestion to combine particle fillers with a polymer film that does not also contain fibers.

Accordingly, Vallittu fails to disclose or suggest the polymer film of claim 1 of the present invention which expressly excludes a polymer film containing fiber reinforcement. Withdrawal of the record rejection of claims 1, 2, 4-6, 8, 9, 11, 16, 17, 19, and 24 under 35 U.S.C. § 102(b) as being anticipated by Villittu and allowance of said claims is respectfully requested.

Claims 1-6, 8, 10, 12, 13, and 16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,039,569 to Prasad et al. ("Prasad"). This rejection is respectfully traversed.

The Prasad disclosure is limited to that of reinforcing fibers used in combination with polymers. Prasad discloses dental structures such as bridges and crowns which includes a structural component, namely a fiber-reinforced polymeric matrix bar. This composite material also requires fibers which are embedded in a polymer matrix. Prasad discloses that particle fillers may also be added, however, the fillers are added to a fiber-reinforced polymeric matrix. There is no disclosure or suggestion to combine particle fillers with a polymer film that does not also contain fibers.

Accordingly, Prasad fails to disclose or suggest the polymer film of claim 1 of the present invention which expressly excludes a polymer film containing fiber reinforcement. Moreover, claim 1, as amended, incorporates the subject matter of claim 25. The Prasad reference has not been cited against claim 25 in the present office action. Therefore, withdrawal of the record rejection of claims 1-6, 8, 10, 12, 13, and 16 under 35 U.S.C. § 102(e) as being anticipated by Prasad and allowance of said claims is respectfully requested.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being obvious over Vallittu or Prasad in view of U.S. Patent No. 5,154,762 to Mitra et al. ("Mitra"). This rejection is respectfully traversed.

Mitra is relied upon for the disclosure of an initiator in microencapsulated form. However, as set forth in detail above, Vallittu and Prasad lack a teaching or suggestion of the dental polymer film of present claim 1 which expressly excludes a polymer film containing fiber reinforcement. Thus, claim 7 is patentable for at least the reasons that claim 1 from which it depends is patentable.

Withdrawal of the record rejection of claim 7 under 35 U.S.C. § 103(a) as being obvious over Vallittu or Prasad in view of Mitra and allowance of claim 7 is respectfully requested.

Claims 14, 15 and 25 stand rejected under 35 U.S.C. § 103(a) as being obvious over Vallittu. This rejection is respectfully traversed.

The Examiner contends that it would have been obvious to coat one side of the material of Vallittu with an anti-adhesive. However, claims 14 and 15 depend from claim 1 and are not obvious in view of the teachings of Vallittu for at least the reasons noted above with respect to claim 1. Claim 25 has been deleted.

Withdrawal of the record rejection of claims 14 and 15 under 35 U.S.C. § 103(a) as being obvious over Vallittu and allowance of said claims is respectfully requested.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being obvious over Vallittu in view of Karazivan. This rejection is respectfully traversed.

The Examiner contends that Karazivan teaches a film detachably held on a carrier film in the form of an inflatable film bag and that it would have been obvious to modify the film of Vallittu having the carrier film of Karazivan in order to better adapt the dental film to the applied surface. However, claim 18 depends from claim 1 and is not obvious in view of the teachings of Vallittu for at least the reasons noted above with respect to claim 1.

Withdrawal of the record rejection of claim 18 under 35 U.S.C. § 103(a) as being obvious over Vallittu in view of Karazivan and allowance of claim 18 is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is hereby earnestly solicited.

Respectfully submitted,

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